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THESIS

AN ANALYSIS OF IMPLEMENTATION OF THE
DEFENSE TRAVEL SYSTEM AT THE
NAVAL POSTGRADUATE SCHOOL

by

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March 2002

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This thesis examines the reengineering of the travel management system and implementation of the Defense Travel System at the Naval Postgraduate School. A review of the reengineering process with different goals and principles is provided as background for understanding the reengineering process. Also, the reengineering process and private sector travel systems are reviewed. Eight steps for reengineering the travel system and a model for the travel system are then proposed. This is followed by a historical overview of the travel reengineering process at the Naval Postgraduate School, a Defense Travel System test site, for designing a new travel system. Data were collected from the current travel system, historical records, and personal interviews. The data analysis is completed with a discussion of the Naval Postgraduate School reengineering process and travelers' views on the reengineered travel system from a random questionnaire survey. The research provides conclusions and recommendations regarding the reengineering process, with directions for future research.

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AN ANALYSIS OF IMPLEMENTATION OF THE DEFENSE TRAVEL SYSTEM AT THE NAVAL POSTGRADUATE SCHOOL

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ABSTRACT

This thesis examines the reengineering of the travel management system and implementation of the Defense Travel System at the Naval Postgraduate School. A review of the reengineering process with different goals and principles is provided as background for understanding the reengineering process. Also, the reengineering process and private sector travel systems are reviewed. Eight steps for reengineering the travel system and a model for the travel system are then proposed. This is followed by a historical overview of the travel reengineering process at the Naval Postgraduate School, a Defense Travel System test site, for designing a new travel system. Data were collected from the current travel system, historical records, and personal interviews. The data analysis is completed with a discussion of the Naval Postgraduate School reengineering process and travelers' views on the reengineered travel system from a random questionnaire survey. The research provides conclusions and recommendations regarding the reengineering process, with directions for future research.

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I. INTRODUCTION

A. AREA OF RESEARCH

In an era of budget cuts and better business practices, the Department of Defense (DoD) has a responsibility to more efficiently utilize its allocated funds. The DOD reported that it spent about $3.5 billion on temporary duty travel in fiscal year 1993, but it could not identify actual processing costs. The DoD estimated that its processing costs may be at least 30 percent of the direct travel cost--well above the 10 percent average reported for private companies and the 6 percent rate that industry considers an efficient operation. (GAO, 1995)

This research will review the reengineering process in commercial organizations and examine the Department of Defense travel system prior to reengineering efforts. Steps for implementing reengineering of a travel system and a model for a travel system will be presented. Implementation of a Department of Defense travel-reengineering project at the Naval Postgraduate School is examined.

B. RESEARCH QUESTIONS

Primary: How do the Defense Travel Reengineering efforts at the Naval Postgraduate School compare with a proposed reengineering process?

Secondary:

1. What are the objectives of the reengineering process?

2. What are the vital steps in a reengineering effort?

3. How do private sector organizations streamline the travel process?

4. What are the differences between the prior and new travel systems at the Naval Postgraduate School?

5. What are the current views of the NPS faculty toward the new travel system?

C. DISCUSSION

In 1994, the Department of Defense (DoD) chartered the Task Force to Reengineer Travel to initiate a review of the entire temporary duty travel system. The task force was comprised of high-level representatives of all the armed services. The task force was directed to develop a new travel system that meets operational mission requirements, improves service to DoD customers, and reduces overall costs to the government.

In 1995, the Deputy Secretary of Defense signed a memorandum outlining the major travel reforms he wanted to see implemented throughout the DoD, equally affecting military member and civilians. The memorandum appointed the Under Secretary of Defense (Comptroller) as the travel reform chief for all of DoD. Some of the policy changes and goals specified in the memorandum were: simplified entitlements, Electronic Funds Transfer (EFT) for travel reimbursement, random audits, standard use of the travel credit card, standardized travel service contracts, and mandatory use of the commercial travel office.

In 1995, the Naval Postgraduate School (NPS) was one of eighteen commands designated as a test sites to reengineer the travel system. Due to differences in accounting systems and standard operating procedures, each test site was told to design its own travel system to satisfy local requirements. Following several years of test results, the DoD planned to analyze data from the test sites to develop the standard Defense Travel System (DTS). Other Navy sites included USS Eisenhower; Personnel Support Activity Norfolk, Virginia; Commander In Chief, Atlantic Fleet in Norfolk, Virginia; Naval Undersea Warfare Center in Newport, Rhode Island; and Headquarters, Commander In Chief, Pacific Fleet in Pearl Harbor, Hawaii.

In 1998, BDM International, a large management consulting firm, was awarded the contract to develop the DTS. BDM was subsequently bought out by TRW Corporation, one of the largest defense contractors in the U.S. The DTS was to be all-inclusive for all civilian and military temporary duty travel. It was to be a PC based software package that allowed the traveler to input his request, obtain travel cost estimates, route the travel request for approval, post the obligation to the accounting system, and route for travel arrangements. After the trip was completed, the traveler entered his report of expenses, which was routed for approval. Payment would be made by EFT to the traveler and the accounting obligation would be expensed.

The NPS is currently utilizing a software package called Travel Manager that was developed by Gelco Corporation, a subsidiary of TRW Corporation, one the

largest U.S. defense contractors. Developing interfaces between Travel Manager and existing administrative and accounting software has been slow. Initial user input screens were difficult to use. A web-based interface was developed to aid users, but the third version is currently being developed and often travel office personnel are retyping data from one system into another.

D. SCOPE OF THESIS

The scope will include: an overview of the reengineering process, the primary steps in a reengineering process, development of a travel reengineering model, an analysis of civilian corporation's travel systems, and an analysis of the implementation efforts of the NPS, including a survey of travelers' experience with the new travel system.

E. METHODOLOGY

The methodology I will use will consist of the following steps.

(1) Literature review: I will conduct a literature review on Defense Travel Reengineering, including government reports and articles detailing the progress of the implementation of DTS. Also, literature on the reengineering process, in general, and travel engineering practices in the private sector will be reviewed.

(2) Interviews: Interviews will be conducted with personnel at the Naval Postgraduate School Comptroller office, travel office, faculty and staff, G2 Software Systems, Inc., a company contracted to train/implement Travel Manager.

(3) A questionnaire was posed to a random selection of faculty requesting information on their experiences and opinions of the NPS travel process.

(4) Data Collection: Historical data from government reports will be collected. Data on the current performance of the NPS travel system will be collected from travel offices and the NPS comptroller's office.

(5) Data Analysis: The collected data will be evaluated to determine the performance of the travel-reengineering program. The data will be compared with the Government Accounting Office's Business Process Reengineering Assessment Guide.

G. BENEFITS OF STUDY

This study will analyze the reengineering efforts and the status of the Naval Postgraduate School Travel System. It will aid in those who are still involve in the travel reengineering effort at NPS and other units that have not begun the process.

F. CHAPTER OUTLINE

Chapter I covers an overview of the thesis. It begins with the origin of the travel reengineering and why it was needed. Chapter II provides background on the reengineering process. It cites research completed listing reengineering principles should be considered. Chapter III cites the reengineering process that I recommend to be followed and the model developed for travel reengineering. Chapter IV chronicles the NPS travel reengineering effort since 1995 and an analysis its status is provided. Chapter V is the thesis summary, including recommendations and issues for further study.

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II. BUSINESS PROCESS REENGINEERING

A. OVERVIEW

During the 1990's, one of the key buzzwords that emerged in business management circles was "reengineering". Established companies were scrambling for ways to become more efficient in order to keep pace with the new startup companies. Management began to use multiple managerial tools to improve operations and processes. Federal agencies have also seen the importance of reengineering to reduce costs and become more efficient and productive.

B. REENGINEERING DEFINED

Business process reengineering (BPR) is the redesign of an organization's processes to achieve dramatic performance improvements. Reengineering involves defining new organizational goals by focusing on customer needs. A reengineering effort must understand and challenge the underlying assumptions on which work is performed and decisions are made. Reengineering systematically redesigns and streamlines work processes, decision-making, supporting organizational structures, and information systems to achieve the desired goals.

Michael Hammer and James Champy (1993, p. 32) define process reengineering as "the fundamental rethinking and radical design of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service and speed".

According to Hammer and Champy there are four key words in this definition: fundamental, radical, dramatic, and processes.

The first term, "fundamental", requires organizations to analyze what they do and how they do it. By questioning what they do, they can often identify rules or procedures that no longer add value to the organization.

The next two words "radical" and "dramatic" imply discarding the old system and starting with a clean slate in designing a new system. Therefore, this is not just process improvement or a fine-tuning, but the design of a completely new system.

The final word "processes" is probably the most important. It is imperative during their analysis that organizations carefully identify and evaluate all tasks that make up a process in order to find problems or non-value added steps.

Reengineering is not simply downsizing, streamlining, or reorganizing. It may include any of these. However, to streamline a process and call it reengineering is not correct. Reengineering is dissecting a process and creating a new process using new ideas to accomplish the mission more efficiently.

C. REENGINEERING PRINCIPLES

There are many things to consider when implementing process reengineering. Knowing where to start can seem overwhelming. However, common characteristics have occurred in successful reengineering projects.

1. Organize Around Outcomes, Not Functions

Reengineered processes combine several jobs. Consider having one person, or a team, perform multiple, or even all, steps in a process. For instance, at Mutual Benefit

Life, a large insurance company, a case manager now performs the entire life insurance application approval process. The long multi-step process, which involved 5 departments and 19 people, has been reduced to one person. The case manager is assisted by a PC-based workstation running an expert system. Turnaround time for applications dropped from 5-25 days to 2-3 days. Errors and delays were reduced because integrated processes meant fewer hand-offs, and this lead to reduced administrative overhead. (Hammer & Champy 1993)

2. Workers Make Decisions

Delegating the ability to make decisions to the lowest level is an effort to shrink the process vertically. In analyzing the current process, determine if workers are required to go to a manager for decisions. Workers are empowered by letting the people who work within the process make decisions. Every effort must be made to allow front line workers in redesigned processes to make decisions and enjoy "fewer delays, lower overhead costs, better customer response, and greater empowerment for workers". (Hammer & Champy, 1993, pp. 53)

If the decisions require monitoring, build the checks into the process. Decision Support Systems (DSS) and other information technology tools can be utilized to supply knowledge, monitor the process, and empower the workers.

3. Substitute Parallel for Sequential Processes

Arrange the steps of the process in a natural order. Identify if tasks are parallel or sequential. Parallel tasks can be performed at the same time. Sequential tasks

need to be completely finished before the next step begins. Artificially imposing a linear sequence on a process slows it down. Reengineered processes work by sequencing tasks in the proper order. (Linden 1993, Hammer & Champy 1993)

4. Processes Have Multiple Versions

To prioritize cases the medical community uses triage. Business processes should work the same way. The normal, simple case must be separated from the urgent, complex, exceptions, and abnormalities. This not only speeds up the process for the simple cases but also frees up the resources to work on the most difficult cases. For instance, the credit division of IBM uses triage to separate the simple cases that may be performed by a computer from the medium-hard cases that require a caseworker, from the most difficult cases that require a caseworker with the assistance of specialist advisors. One process to handle all cases results in a process that must be complex enough to handle the most difficult cases. A multi-version process, when applicable, is faster. (Hammer & Champy, 1993)

5. Work is Performed Where it Makes the Most Sense

Traditional organizational boundaries require integration between functions for even the simplest tasks. After reengineering, the interaction between the process and the organization can be quite different. For example, the IMPACT credit card used throughout DOD allows an artillery unit or a headquarters element to buy needed supplies, under a certain dollar threshold, directly from vendors, thereby taking Purchasing and Contracting (P&C) out of the loop. This allows the units to get certain

supplies quicker and frees up the resources at P&C to work on larger contracts.

Another example can be found in industry. Instead of monitoring and ordering the level of Pampers or Crest on their shelves, stores have shifted that responsibility for inventory management to Proctor and Gamble Corporation (P&G). This allows the stores to concentrate on retailing, and P&G is better able to predict demand and smooth out its production curve, and schedule deliveries as necessary. In both of these examples, work that was traditionally performed by one unit or organization has been given to customers (or suppliers) with the results being a reduced need for coordinating the flow of information and products across organizational boundaries. Reengineering attempts to reduce the amount of integration required by performing work where it makes the most sense. (Hammer & Champy, 1993)

6. A Case Manager Provides a Single Point of Contact

Sometimes even reengineered processes are so complex that work must be divided into different tasks. When one person is not able to do everything or, due to internal control reasons, several different individuals must perform the various tasks. In such instances, it may be useful to use a case manager to minimize and simplify the interface with the customer. The case manager takes an input and works it through the process thereby shielding the customer from the complexity of the internal processes.

In Charlottesville, Virginia, a person trying to open a business spent two days at the state capital going to and from the Commissioner of Revenue's office, the safety

office, and the community development office. Within each office, numerous duplicate forms are completed and checked for zoning, handicapped access, and architectural review. A team from the three offices reengineered the process. Now the process uses a cross-trained case manager at one location, to interact with the customer, and fills out one form. According to Linden (1993), the entire process now takes less than a half-hour for the customer and the workers "love" it because they do not have to shuffle paper.

7. Reconciliation is Minimized

Reengineered processes are simplified by reducing the number of external contact points in a process that must be reconciled. In the case where P&G restocked their own products in customers' stores it is no longer required that stores prepare and submit a purchase document to P&G. In addition to the time saved by not producing the purchase document, stores also reduced the reconciliation required at the end of the process. There is no need to double check everything against the purchase document, they need only reconcile the invoice and the payment with inventory received.

A similar reengineering effort took place at Ford Motor Company where instead of manually reconciling the purchase order, receiving document, and invoice with the payment, it is now done electronically. If Ford had only applied information technology (IT) to the process, this might be a good example of automation. However, Ford reengineered the process first and no longer accepts invoices from its suppliers. Payments are made

automatically based-on the purchase order and the electronic verification from the warehouse that the goods have been received.

The result at Ford was a 75 percent personnel reduction in Accounts Payable and improved financial information. In both these examples, IT enabled a new process to perform its function without time-consuming manual reconciliation. The checks and controls are built into the system. (Hammer & Champy, 1993)

8. Hybrid Centralized/Decentralized Operations are Prevalent

Reengineered processes combined with IT allow organizations to enjoy the benefits of centralization and decentralization in the same process. Shared databases and remote computing open windows of opportunity to capitalize on the economies of scale offered by centralization while decentralization allows for the faster decision making and smaller organizational elements. (Hammer & Champy, 1993)

For example, corporations are allowing sales personnel to use notebook computers and wireless modems to connect to the home office's database of product and inventory information. Controls prevent the sales force from quoting unreasonable prices or promising delivery times that the organization cannot meet or keep. The technology allows companies to reengineer the process to "eliminate the bureaucratic machinery of regional field offices, enhance the sales representatives' autonomy and empowerment" and at the same time "improve the control the company has over selling prices and conditions". (Hammer and Champy, 1993)

9. Bring "Downstream" Information "Upstream"

Information should be captured only once and at the source. Often numerous pieces of paper with the same information are filled out for different steps in the same process. If possible, standardize forms and get the information needed for the entire process at one time. IT can make that information available to workers in the process.

For example, the Port Authority in Singapore required more time to complete the complex administrative process for cargo ships to unload and reload than the physical movement of goods on and off the ship. This had the effect of reducing the throughput at the port. For Singapore to compete with its larger neighbors it had to increase throughput. The administrative process was reengineered by capturing all information needed for the process at one time. The coordination of data between agents, freight forwarders, shipping companies, banks, insurance companies, port authorities, customs, and the cargo ship is now entered on one form. This form is now electronically sent to the port before the ship arrives. By the time the ship pulls into port, its goods have cleared customs, the port is prepared to begin off-load, trucks are ready to haul the goods, and the fees are paid. Through reengineering and the use of IT, what once required 20 hours for an average container ship and as many as 20 different forms is now completed in 10 hours and using one form.

10. Scrutinize Every Piece of Paper in the System

Every time a piece of paper enters the system, you must demand to know why. Paper must be moved around,

signed, filed. Paper slows things down. Often a piece of paper sits in an in-box for days without action. Wherever possible reengineering uses advanced technology to eliminate paper within a system.

11. Applying Cost, Service, and Quality Measures to Measure Effectiveness

Appropriate measures of effectiveness must be put in place during implementation to be able to determine if the reengineering process is on the right track. Measures of effectiveness will vary with the process, but can include processing times, accuracy, system availability, and user satisfaction. They must measure internal processes as well as the effects on customers.

D. PROCESS INNOVATION VERSES PROCESS INNOVATION

Reengineering is one of many tools that an organization can use to produce change. "Process innovation" (reengineering) is different from "process improvement" because innovation involves making radical changes in the way a particular process is performed. Process innovation seeks a higher level of change than process improvement. Table 1 illustrates differences between process improvement and innovation.

The list of identifiers is described in the following paragraphs.

1. Level of Change. The level of change is the primary indicator of process change. While a process improvement initiative involves making a series of incremental changes to an existing process, a process innovation project involves completely redesigning a given process and then implementing the new process.

	Improvement	*Innovation*
Level of Change	Incremental	Radical
Starting Point	Existing process	Clean slate
Frequency of Change	One-time/continuous	One-time
Time Required for Change	Short	Long
Participation Style	Bottom-up	Top-down
Typical Scope of Change	Narrow, within functions	Broad, cross-functional
Level of Risk	Moderate	High
Primary Enabler	Statistical process control	Information Technology
Type of Change	Cultural	Cultural and structural

Table 1. Process Improvement verses Process Innovation (From Davenport 1993)

2. Starting Point. When analyzing a process for process innovation you must start with a clean slate. This allows for a free flow of ideas and the ability for radical change. Process improvement begins with the existing process and selects part for improvement.

3. Frequency of Change. The frequency of process improvement can be a one-time event or it can be a continual process changing one part of the process at a time. Process innovation will be a one-time change involving the complete process.

4. Time Required for Change. Consequently, process innovation projects take much longer to complete than process improvement projects.

5. Participation Style. Process improvement can be organized at any level. Process innovation requires a top-down managerial approach. Senior level support is needed if implementation is going to be successful. The organization must be truly committed to change and the reengineering teams must have senior level management involved and supporting the reengineering process. Without senior level support, the team will be able to design a new system but will be fighting an uphill battle toward implementation.

6. Typical Scope of Change. Process innovation crosses functional boundaries that separate departments. Process improvement will often be contained within a particular section.

7. Level of Risk. The level of risk is much higher with process innovation because you are starting with a clean slate changing the entire process at one time.

8. Primary Enabler. Information technology is the primary enabler of process innovation. Computer systems and software packages work together to tie processes together. Process improvement will utilize controls to maintain process flows.

9. Type of Change. The culture of an organization is very difficult to change. Both processes have to overcome culture to be accepted change. Process innovation takes an extra step and changes the structure of an organization to accomplish its task.

E. CONCLUSION

Reengineering is a management technique for achieving improvements in cost, quality, and customer service by making fundamental changes in the way an organization defines its mission and performs its work. Reengineering efforts are based on a thorough understanding of an organization's customers and the environment.

Business process reengineering is typically characterized by a top management-driven effort to challenge the current organizational mindset to one that is more receptive to customers. It identifies and analyzes core business processes and makes systemic changes to the organization's structure, culture, and responsibilities in order to support reengineered processes.

III. DEVELOPMENT OF THE REENGINEERING MODEL

A. OVERVIEW

Each level of an organization plays a different but equally important role in the reengineering process. The DoD had conducted the research necessary and had determined that reengineering of the travel process was required. The Naval Postgraduate School (NPS) was selected as one of several test sites for travel reengineering. It was the responsibility of the NPS leadership to accept this tasking and execute the reengineering process.

In Section B below, I will discuss DoD's process for determining the need for change. An analysis of the current system was completed followed by studies of other more effective systems. Sections C and D will lay out the reengineering steps and model used for implementing the new travel process at the NPS.

B. DECIDE TO CHANGE

In September 1993, the National Performance Review led by Vice President Al Gore, called for the overhaul of the entire DoD travel system. In 1994, the DoD assigned a task force comprised of high level representatives from all military branches to determine if the travel system was broken and in need of a reengineering effort. The Report of the Department of Defense Task Force to Reengineer Travel listed three principal problems with the current system:

1. Current travel policies and programs focus on compliance with rigid rules rather than on performance of the mission. Checks and safeguards against abuse of travel funds are added on rather than built into

processes and are disproportionate to the exposure to abuse. Indeed, current mechanisms are unlikely to uncover some of the major sources of abuse (such as unnecessary trips). The compliance mindset appears based in a view of travel as a perquisite, rather than as essential to carrying out the Department's mission.

2. Current Department travel practices are outmoded. Private sector business practices for travel have evolved significantly in the last two decades, but those developments are not reflected in the Department's practices.

3. The current travel system is not integrated. Responsibilities for travel at all levels of the Department are fragmented and "stovepiped" within separate functional communities. Severely "stovepiped" administrative processes drive up cost, impede mission accomplishment, and burden travelers. System integration is performed by the traveler who carries paperwork from one function to the next. (GAO, 1994)

Figure 1 presents the 34-step DoD travel process reported by the General Accounting Office (GAO). The travel process, which begins when the travel need is identified and ends when the travel vouchers are complete, is a time consuming, paper intensive, and cumbersome process. It requires each person in the chain to handle each claim two to three times. The traveler must spend a large amount of time completing forms and making some of his or her own reservations. The supervisor is required to approve the travel request, the obligation of funds, and the voucher for disbursement of funds.

After the traveler identifies the need for travel, he or she must obtain a cost estimate. In this system the traveler actually had to call rental car companies, Commercial Travel Office (CTO) for airfare prices,

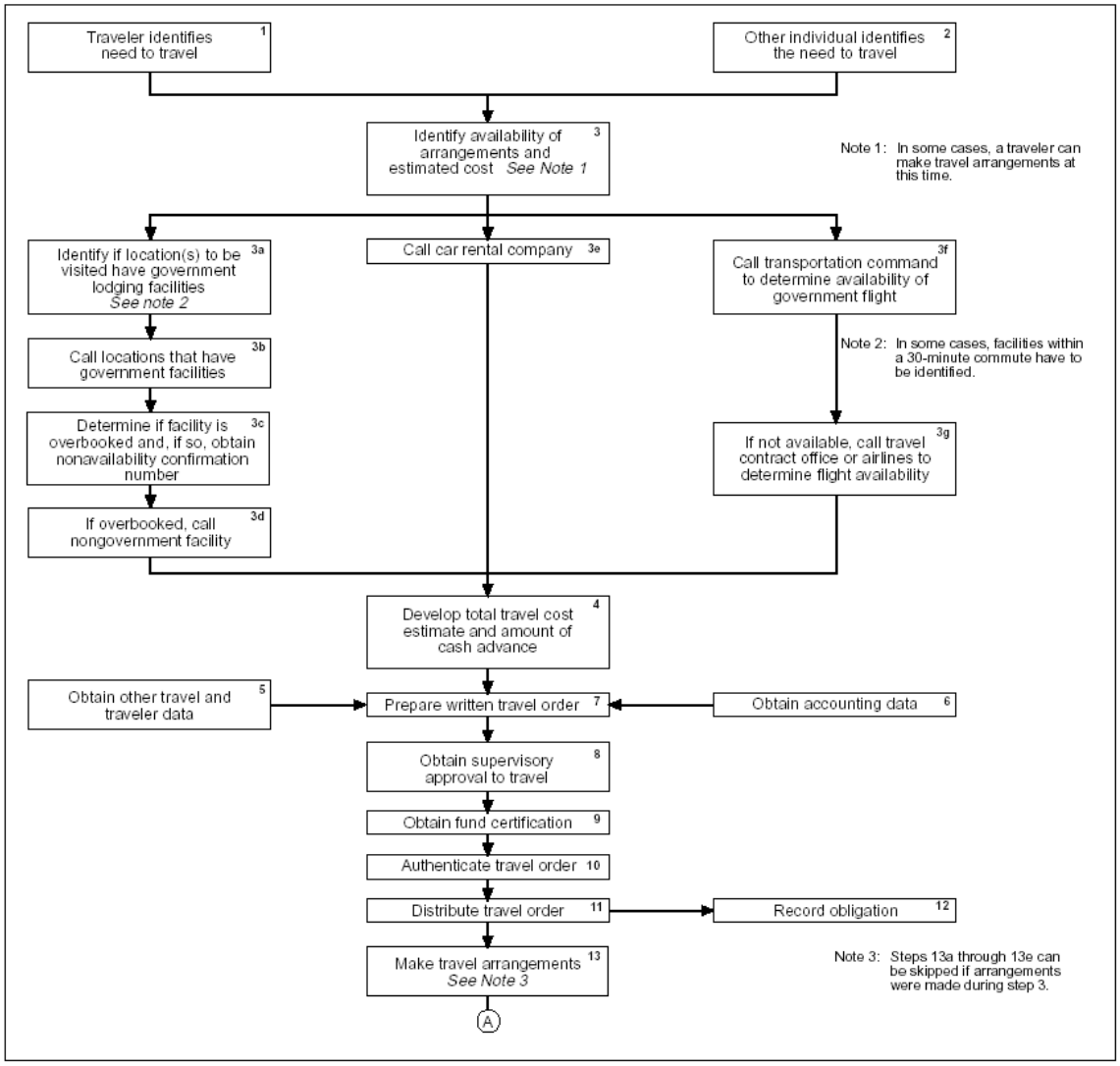

Figure 1. DoD's Travel Process (From GAO/AIMD/NSIAD-95-90)

government lodging/hotels for availability and price. If the traveler knew that there were sufficient funds available in the travel budget, arrangements could be made during the first phone conversation with the service providers. Often, two calls were made: one for the cost estimate, and one to make the arrangements.

Written travel orders were produced and the obligation of funds were recorded in the accounting system. A

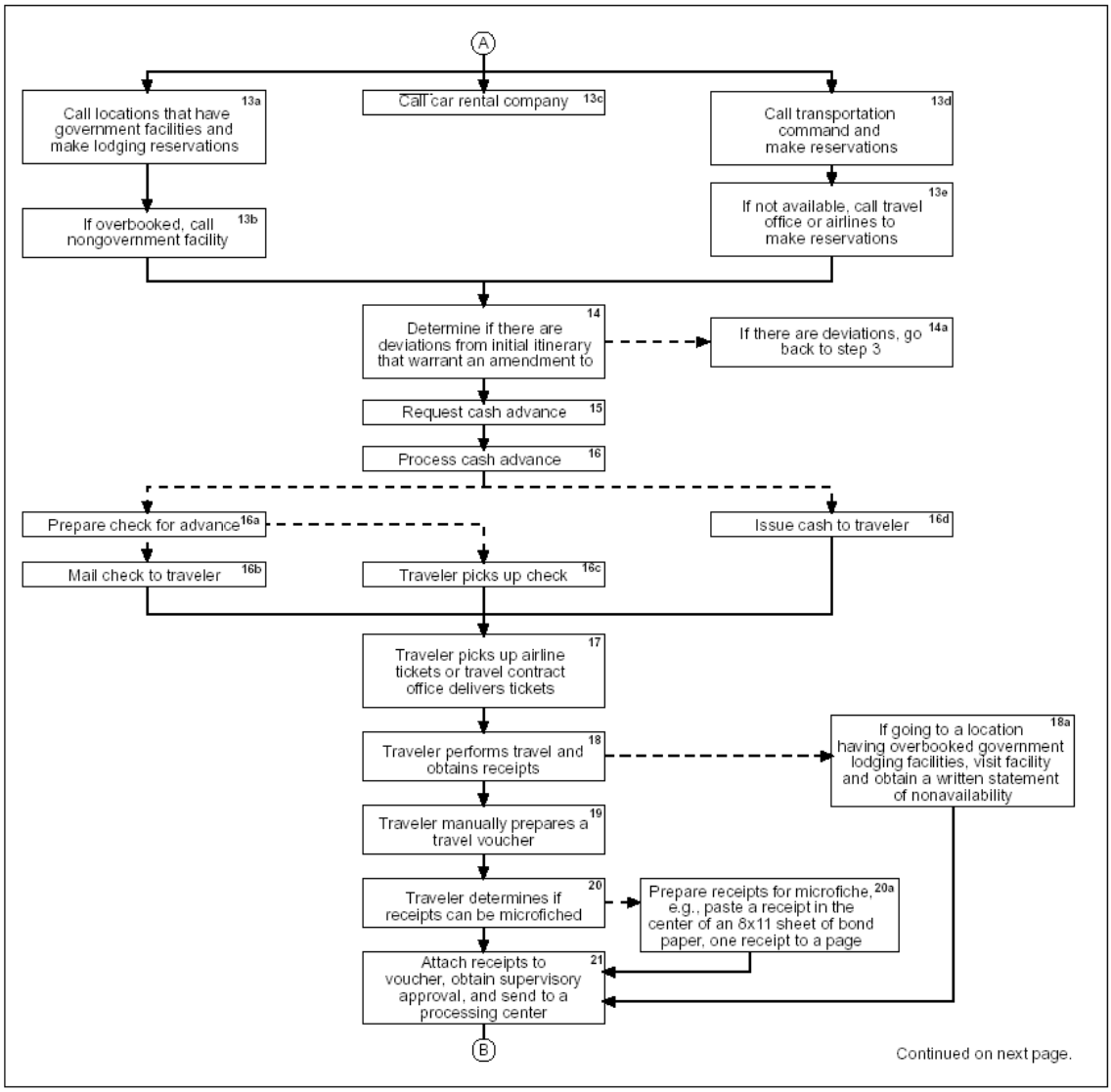

Figure 1 (cont.)

supervisor's approval was required to authorize the travel and the obligation of funds.

Any modifications to the travel itinerary are amended to the orders. A cash advance may be processed for the traveler. The traveler receives his airline tickets and orders and performs the travel.

Upon return of travel, the traveler manually completes a travel voucher for settlement of his expenses.

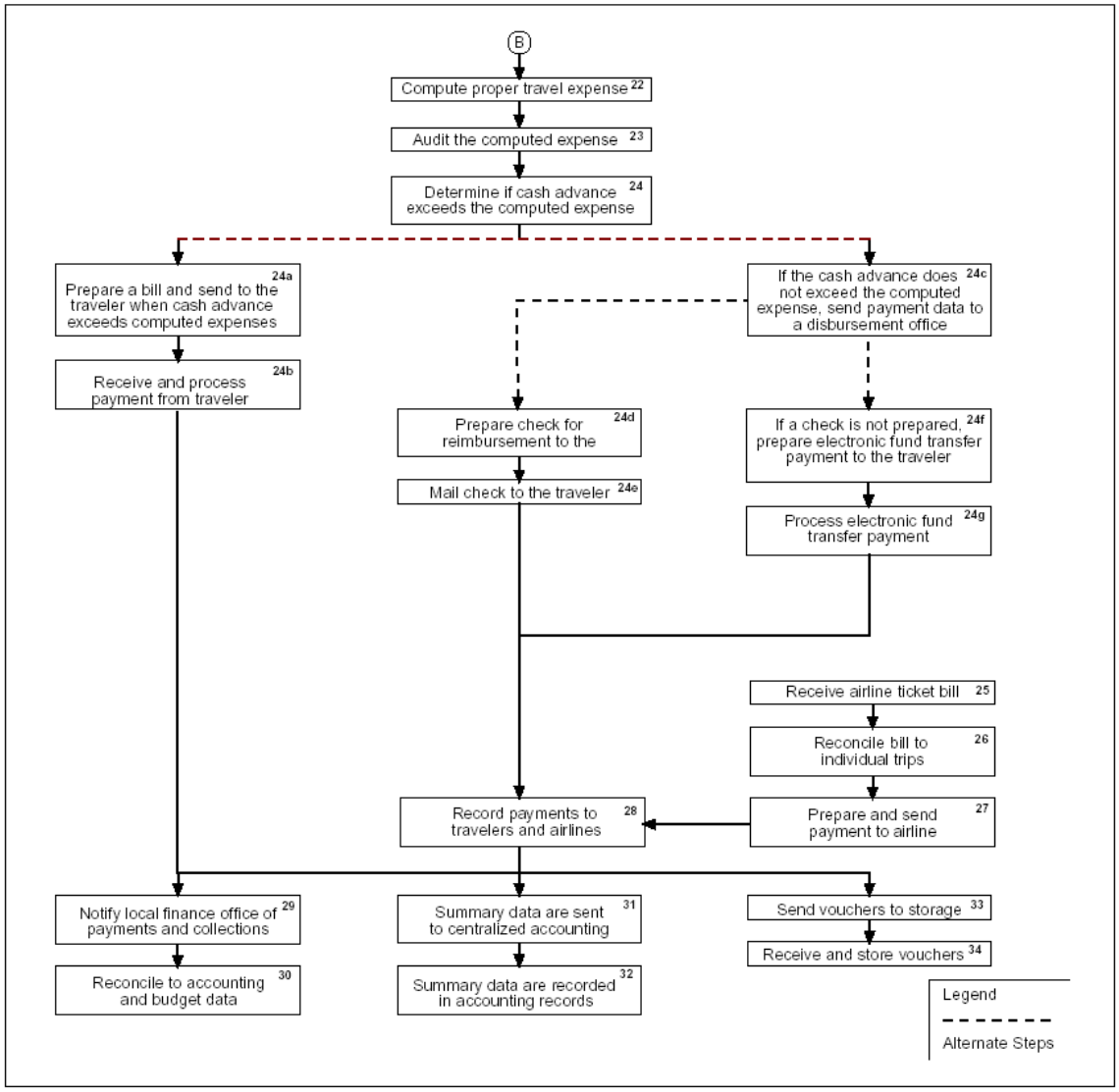

Figure 1 (cont.)

A supervisor again signs the voucher to verify official expenses. The voucher is forwarded to the processing center and the claim is computed less any cash advance. If the settlement exceeds the cash advance an electronic funds transfer payment or check is disbursed. If the cash advance exceeds the settlement, the traveler is billed for the balance. Payment is made to the CTO for the airline ticket. Finally, accounting records are updated and copies of the package are made and retained for historical files.

The United States General Accounting Office (GAO) issued several reports to the Chairman, Subcommittee on Oversight of Government Management and the District of Columbia, Committee on Governmental Affairs, U.S. Senate on the reengineering of the DoD travel Process. One of the GAO's tasks was to analyze successful corporations and determine the best practices used during the travel process.

In GAO/AIMD/NSIAD-95-90, the GAO analyzed twenty companies and identified General Electric and Allied Signal as model corporations. The GAO found the following eight practices were used to reduce the processing cost of their travel operations.

1. Empowering travelers to decide when travel is necessary. Both General Electric and Allied Signal no longer require employees to obtain supervisory approval before traveling. Rather, employees are empowered to decide what travel is needed to carry out their company's mission. For example, General Electric representatives stated that travelers are to use good business sense and to treat the company's travel money like their own. Allied's practice is to allow employees to make travel decisions that result in the least expense to the company, provided that this does not result in unnecessary inconvenience or ineffective use of company time.

2. Eliminating prior approval of travel and travel orders. In concert with empowering employees to make travel decisions, neither company requires a formal travel authorization document. Instead, supervisors receive reports of travelers' actual expenses after travel is completed. Any inconsistencies or concerns are addressed at that time.

3. Mandating use of a corporate charge card for travel expenses and cash advances. Both companies require travelers to use corporate credit cards for

transportation, hotel, car rental, and other major expenses, as well as for cash advances. By requiring the use of corporate cards, both companies have reduced their overall levels of cash advances and outstanding balances. The companies also receive the benefits of credit card usage through cash back and frequent flyer programs. Allied Signal, in fact, requires that travelers justify instances when credit cards are used for less than 90 percent of expenses. Subsequent to travel, Allied Signal travelers have the option of receiving reimbursement and paying their own corporate credit card charges, or having Allied submit payments directly to the credit card company. General Electric has its own corporate credit card that employees are required to use.

4. Reducing the number of travel agents used. Before reengineering, both companies used numerous travel agents to make travel arrangements. Specifically, General Electric had contracts with over 300 agents while Allied had over forty. Since reengineering, General Electric has eliminated all but one travel agent and payment for all airline tickets are made from the corporate account. The relationship with this agent is considered a "partnership", with both working to reduce direct travel costs. Allied has one agent to handle 95 percent of its travel arrangements and a second agent to handle the other 5 percent.

5. Consolidating travel-processing centers. In the past, Allied had at least 23 travel voucher processing centers while General Electric had as many as forty. Each company has since consolidated its voucher processing centers into a single location.

6. Automating voucher processing. While General Electric travelers still manually prepare expense reports, Allied Signal travelers have the option of using an automated system. Allied Signal representatives told us that they spend about $10.00 to process a manual expense report, but only about $3.00 to process an electronic report. Due to additional improvements, Allied expects the cost to process the automated expense report to decline even further, to about $1.50, in the near future.

7. Simplifying travel policies. Both companies revised and shortened their travel policies, which they considered too cumbersome and complex. General Electric's draft policy is now contained in 2 pages, while Allied Signal's travel policy totals 11 pages.

8. Conducting random audits of travel vouchers. General Electric and Allied Signal no longer audit each travel expense report as they did in the past. Currently, General Electric conducts detailed audits of only 5 to 10 percent of its reports, while Allied Signal audits about 45 percent.

Figure 2 illustrates General Electric's and Allied Signal's Reengineered travel process as reported by the GAO. In comparison to the DoD process in Figure 1, they have drastically streamlined their process into eleven manageable steps. Figure 2 does note differences between General Electric and Allied in processing expense reports and reimbursement to travelers.

C. PROPOSED MODEL FOR THE TRAVEL PROCESS

Given that the NPS is a test site and the above review of the reengineering process and private sector travel practices provides useful guidelines for reengineering the travel process, this section explains the reengineering process and the travel system model I propose for reengineering the travel process at the NPS. I will describe the process in the general form in order to show those steps required for a reengineering effort. Eight steps for the travel reengineering are first discussed, followed by the proposed travel system.

1. Senior Leadership and Support. Top management must support and lead the reengineering effort to ensure success. Without the support of senior leadership in an

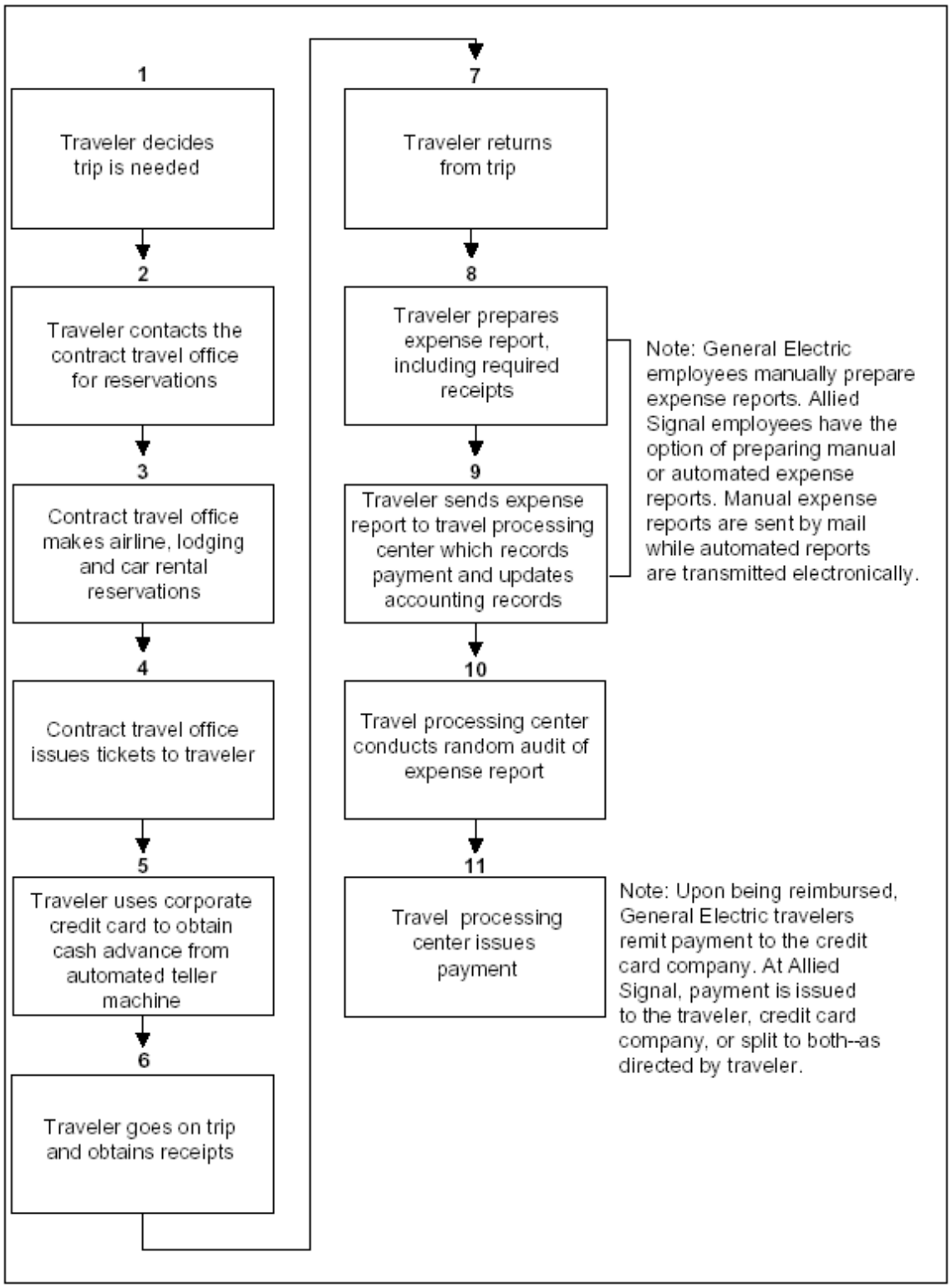

Figure 2. General Electric Travel and Allied Signal Travel Processes (From GAO/AIMD/NSIAD-95-90)

organization the effort will likely die. Senior leadership must be vocal and passionate about the reengineering process.

2. Selection of a Reengineering Team. The top management must select a reengineering team. Ideal team members are responsible for or affected by a portion of the reengineering process. Team members should be respected individuals representing a variety of NPS subunits, trusted members of the organization; firmly engaged in reengineering efforts; and actively recruited rather than assigned to their roles. All major categories of travelers should be included: administration, faculty, staff, and students.

It may be useful to incorporate a person who knows little about the travel process to act as a catalyst and to ask questions that make the experts rethink the process. The team should be comprised of 6 to 10 members. Having too many members makes it difficult to get everyone together, while having too few members place limits on what the group can accomplish. Although it would be preferable to have full-time assignments, at least 50% of the team members' duties should be dedicated to the reengineering effort. If the reengineering effort becomes just another collateral duty, then the quality of effort will suffer.

3. Who Heads the Team? The team must be placed in the hands of a strong individual who is known for making change happen and widely respected for his leadership and integrity in the organization. While team members meet on a daily basis, the team leader must meet weekly with senior leadership for reporting progress and seeking approval for

certain actions. Senior leadership must work closely with the team leader to ensure continued support of the reengineering process.

4. The Need for a Plan. The reengineering team, with guidance from senior leadership, must develop the plan for the reengineering project. Senior leadership must approve the reengineering plan to provide the authority behind the project. The plan should be kept simple and flexible. The plan has to define the scope of the new process, so revisions do not begin to drive the process and due dates and milestones need to stay on target. Implementation should be simultaneously applied to all users. This will reduce the requirement to run two systems. However, and organization runs a high risk when shutting down the old system. For this reason, the organization should completely support the changeover. There is no turning back. One alternative plan is a pilot test before the entire organization goes live with the new system. However, this approach is viewed as "incremental" and increases the timeline for total implementation.

A solid and workable plan should answer the following questions:

- Are measurable milestones and timelines built into the change plan?
- How realistic are the goals and deadlines?
- What is the specific timeline for change?
- Are all parts of the organization affected by the reengineering changes?

- How is success/failure measured?
- Are resources (i.e. software, hardware, personnel) budgeted for?
- Who is responsible for implementing the plan?

5. Frequent Reports/Communication/Status. Once the reengineering team is comfortable with the answers to these questions, the change plan and periodic updates to the progression of the changes must be communicated to all personnel and stakeholders that will be affected. A web site that provides updates can be developed. Team members should meet periodically with frequent travelers to distribute information and allow the heavy users of the proposed system to provide input into the process.

6. Education and Training. One of the major problems facing reengineering projects is overcoming the cultural bias not to accept change. The senior leadership, team leader, and the reengineering team must put in place a specific plan to win the hearts and minds of all stakeholders in the travel system. This plan can be thought of as a marketing campaign. Actively marketing the deployment and implementation of DTS must gain approval at all levels.

There are two major objectives to the marketing plan. First, gain support of the implementation of DTS. Second, insure that the stakeholders can answer four basic questions of the implementation effort.

- What is DTS?
- When is it coming?

- How long will it take?
- What will it do for them?

The material should be first distributed through mass media. Articles posted in the base online news report and on bulletin boards can begin to influence stakeholders. A web page on the intranet can show examples of the new procedures and have links to reengineering efforts at other commands. Specific briefings targeted for staff and faculty can be held.

Users are more likely to accept change if they are part of the effort. By fostering ownership and commitment of the change effort, the resistance to change is minimized. Involving members throughout the process through communication of the need to change and the planned changes fosters ownership and buy-in.

The talents and skills of leaders are used to tap into the creativity and energy of the entire group. This type of management necessitates that managers balance control and facilitation, formal and informal discussions, recognition of individual and group effort, loosely fashioned strategies and firmly committed plans. Members are empowered by delegated authority to make required changes.

Training is a key element in supporting change, yet it is frequently given little attention. The personnel and stakeholders not only need training during the implementation phase, but it needs to continue in order to maintain identified skill sets and educate new users.

Continued familiarity with the system will build acceptance.

7. Customer Satisfaction and Feedback. The most important reason to reengineer is to meet customer needs. This may mean process simplification, or decreasing processing times. Internal considerations, such as decreasing costs or manpower requirements, may drive reengineering efforts. However, reengineering to meeting customer needs offers far more dramatic and compelling results than reengineering to decrease costs.

8. Weighing Costs and Benefits of the Travel System. The costs of a reengineering project are the dollar value of the resources consumed; the opportunity cost of using the resources for reengineering as opposed to something else; and the human costs, measured in terms of organizational morale. The benefits realized for reengineering include: increased customer satisfaction; decreased operating costs resulting from the elimination of nonvalue-added activities; and the time, human, and financial resources saved by operating more efficiently. Costs and benefits of reengineering should be presented in terms of the same metrics that will be used to assess progress when the project is underway.

Figure 3 represents a travel process model that includes the value added parts of the process as identified from the review of DoD and private sector practices. The traveler is able to decide if the trip is necessary and completes his travel request online. The traveler is

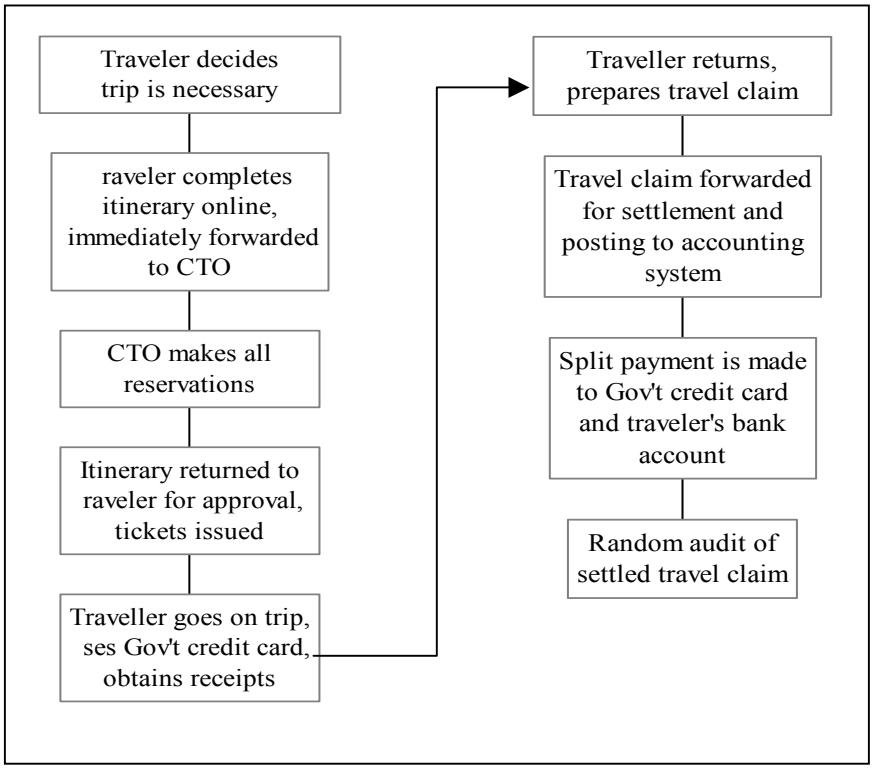

Figure 3. Proposed Travel Process Model

responsible for knowing his own funds availability and is double-checked by the system the traveler is using request is forwarded to the CTO and all the reservations are made. If there are any questions, a call is placed directly to the traveler. The itinerary is sent to the traveler for approval and the tickets are issued.

When the trip is completed, the traveler completes the travel claim online. The travel claim is forwarded to the administration section for payment. The person processing the travel claim is trained to identify fraud. Once the travel claim is approved, the accounting system is updated and payment is made to the traveler, the government credit

card, or both. The final step is a 10% random audit of all travel claims to ensure accuracy of the system.

D. SUPPORT CHANGE

Once the wheels of change are fully set into motion, leadership must continue to support all facets of the reengineering process. Leadership must back up their initial words with continued action by providing the reengineering team with the resources required. Some of the resources the team needs are the skills required to complete the change. It may be personnel or training in a specific area, or a new technology that is not inherent to the team. Computer support and software development is a requirement that must be made available to the team.

E. CONCLUSION

There are three steps to a reengineering process, deciding to change, effecting the change, and supporting the change. It is the leadership's responsibility to set up the reengineering effort to succeed. Leadership must be willing to commit resources and their best people. The people assigned must have the authority to make the changes that need to be initiated. All levels must set high standards and insist on results.

This chapter concludes with a proposed model for the travel system. The model contains only the essential steps in the travel system. It resembles the travel systems commonly found in the private sector. The next chapter will review the NPS reengineering efforts over several years, which were aiming to implement the new Defense Travel System.

IV. THE NAVAL POSTGRADUATE SCHOOL'S REENGINEERING EFFORT

A. OVERVIEW

The NPS travel office processes approximately 3,500 temporary duty travel assignments a year. The annual travel costs are approximately $5 million. Thus, the average cost per temporary duty travel is a little less than $1,500.

The NPS travel process has been constantly under construction since 1996. In reconstructing the steps of the reengineering effort, several different data gathering techniques were used. Interviews with personnel in the Comptroller Department, which includes the Travel Section, were conducted. Documentation was on file annotating the steps taken in the reengineering effort from January 2000 forward was gathered. These were examined to identify major events in the travel reengineering efforts. The following is a brief description of the major steps in the reengineering process used by the NPS staff for implementing the Defense Travel System.

B. THE REENGINEERING EFFORT

In Chapter III, I discussed the DoD concerns about improving the travel system that resulted in the NPS being selected as a travel reengineering pilot site in 1996. The majority of the process fell under the purview of the NPS Comptroller. The Comptroller was responsible for determining the availability of funds and processing the budget authorizations and obligations. The Personnel Support Detachment (PSD) was responsible for originating

orders and voucher processing, and SATO made all airline reservations.

In 1996, a travel reengineering team was organized to evaluate possible software programs that could meet the needs of the NPS community. The team was comprised of a cross section of personnel. Representatives were primarily from the Comptroller division. It also included personnel from the Personnel Support Division (PSD), which is responsible for the processing of orders and travel claims, and the SATO office.

After evaluating a software package called Federal Automated System for Travel (FASTravel), which the Air Force developed, and Travel Manager (TM), software developed by Gelco, TM was selected to replace the all-paper process at NPS. Gelco is a corporation that specializes in travel management software. Travel Manager was selected on two major selling points: the software's ability to be integrated within the current fiscal system at NPS and Gelco's contract for support of the product.

After the selection of the software, five academic Departments (Physics, Mechanical Engineering, Space Systems, Operations Research, and Computer Science) within NPS were selected to test the program. The test lasted approximately from September 1996 to August 1997. The travelers were to test the system for feasibility. The team remained in place to monitor the system. They listened to problems and recommendations from travelers. The team worked with Gelco in order to make software improvements to Travel Manager. So, the off-the-shelf

software was beginning to be a specific package customized to the requests of the team at NPS.

In 1998, the software was released for use to all departments at NPS. Travel Manager at this point was a PC based, stand-alone software package. It was intended for the traveler to enter all the pertinent data for an upcoming travel requirement. The data included travel dates and times, destination, mode of travel, accommodations, rental car, and accounting data. The data was forwarded to the commercial travel office (SATO) to make the travel arrangements.

Due to individual difficulty using Travel Manager or time constraints, a designated administrative person within PSD would enter all the data and forward the information to SATO. According to those interviewed, many faculty members favored this process, mainly because it was the same process used in the manual system. The traveler prepared a paper request form, which was handed to his or her department's travel assistant to process. The traveler worked exclusively with one person on travel matters. The administrative representative for travel became familiar with the traveler's unique requirements. After the implementation of this process, the team was disbanded.

However, there was still a need to streamline the process. Throughout NPS there were over 20 administrative travel personnel acting as data entry persons for Travel Manager. Having over 20 points of contact was time consuming and made it difficult for SATO and PSD.

Travel Manager also needed to be modified and integrated with the administrative and accounting systems.

Recall that one of the reasons given for selecting Travel Manager was its ability to be integrated into existing systems. The passing of paperwork from one system to another and time spent awaiting action drastically slowed processing time for travel requests and travel claims. The traveler was not receiving improvements in customer service. Tickets and travel orders were being issued at the last minute with inconvenient routes and schedules.

From 1998 to 2000, the system remained in place with all its inherent problems. Traveler complaints rose again to the senior leadership level. The NPS Provost, who is the senior leader for the academic personnel at NPS, sent a note to the Comptroller to "fix it" - meaning the travel system.

In January 2000, the Comptroller formed two new development teams for reengineering the travel system. The teams were comprised of seven members primarily experts from the related administrative departments. Team one, mainly from the comptroller's division, researched the processes involved with the travel request. Team two incorporated personnel from PSD and was involved with the voucher/claims process. The comptroller was the lead member of both teams. There were no members of the faculty involved in either team.

The first task assigned to each group was to map the current process flow for the NPS travel system. Figure 4 shows the overall process that existed in January 2000. The figure also shows data pertaining to the length of time and what percentage of the work flowing through the process. Although actual processing time was short,

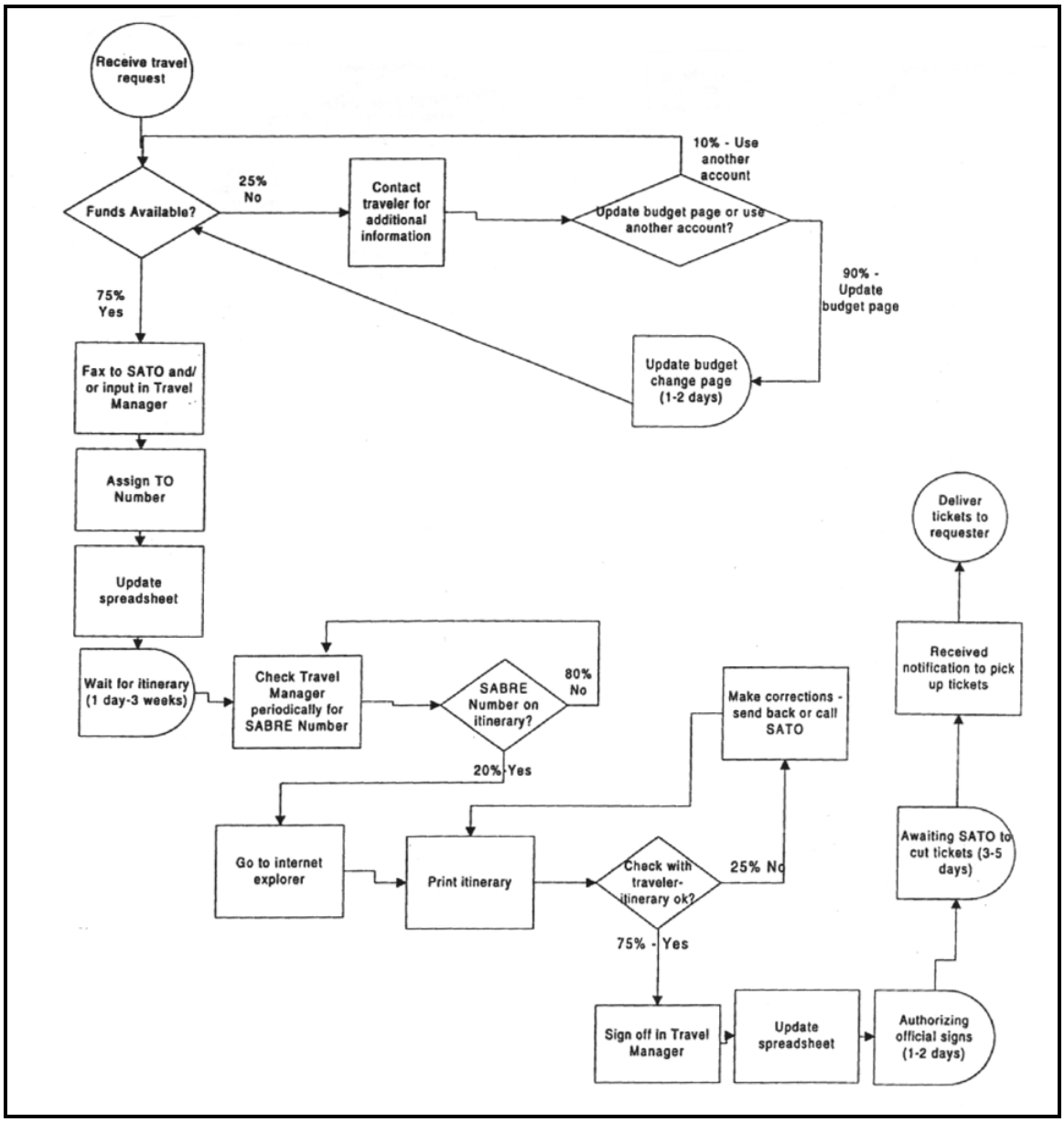

Figure 4. Existing NPS Travel Process. (From Comptroller Division archives, January 2000)

sometimes just a few minutes, some steps took several days because the request sat in an in-box sometimes for several days or waited to be forwarded to the next step. The typical travel request was taking 8 days to process. Travel reimbursement was taking up to 21 days.

Based on her experience and interaction with other team members, a member of team one developed a list of "Travel Request Process Expectations". The list was routed to other teams members for input and approval. The list included expectations from each step of the request process, the traveler, administration, SATO, and accounting representatives. The expectations were developed into the travel process standards. The standards listed processing times, percentages for accuracy, and projected deadlines. A similar list of standards was developed for the travel voucher process.

Some of the pre-travel standards for better processes are listed below.

- Traveler's request is completely filled out 95% of the time – providing:
  - A specific time of departure.
  - Specify a preferred airline, if any.
  - Specify preferred hotel or location.
  - Rental car size if other than economy, and provide justification.
- If not completed in full - traveler must be willing to accept itinerary as provided by SATO.
- SATO provides itinerary/arrangements within 3 days after request is submitted by traveler.
- Deliver the itinerary to traveler 3 working days of travel request.

- Tickets and travel orders delivered to department office 3 working days prior to traveler's departure.

The post-travel process had similar standards.

- Submit receipts and other required travel paperwork within 5 working days from the date of return.

- Approving Official review and sign travel voucher within 1-2 days of receipt.

- Personnel Support Detachment process the travel claim within 2-3 days and have department travel voucher summaries available within 5 days.

In February 2000, after evaluating the process flows and processing times that had been collected, the two teams felt that the next step was to design the new system.

The first step was to consolidate the travel assistants into one centralized office for travel processing called the Shared Services Office. The justification for this reorganization decision was to eliminate some inefficiency in the travel process. Table 2 shows the pros, cons, and issues surrounding the decision to create a Shared Services Office.

Travel Manager was also modified to submit data into existing administrative and accounting systems. The current travel process is represented by the flowchart in Figure 5. A traveler completes a web-based form with all the pertinent travel information and the form is forwarded to the traveler's supervisor for authorization or directly

PROS	CONS	**ISSUES TO BE RESOLVED**
Consistent policies and procedures	Perception of a "faceless" organization	Efficient routing of requests (Web based form?)
A back-up is always available	Loss of control by departments	Assign lines of accounting
More even workload	Loss of service	Location/space issues
Expertise is centralized	Travelers waiting for shared services concept to fail	Coordinating the best order for processing requests
Office is always manned		Controls lifted on TM
Reduce workload for those who process travel as an additional duty		
Transitions are less disruptive		
Better feedback		
Less contacts for SATO/Admin to deal with		
Better accuracy		

Table 2. Issues with forming a Sheared Services Office. (From Comptroller Division Archives, February 2000)

to the Shared Services Office. The travel assistant then enters all the traveler's data into Travel Manager. The travel assistant acts as a liaison between the traveler and SATO to work out travel scheduling issues.

The system in Figure 5 has almost as many steps and is as complex as the prior system in Figure 4 because the process has not changed significantly. The most significant change to the process has been automation. Forms that are e-mailed through the process have taken the place of

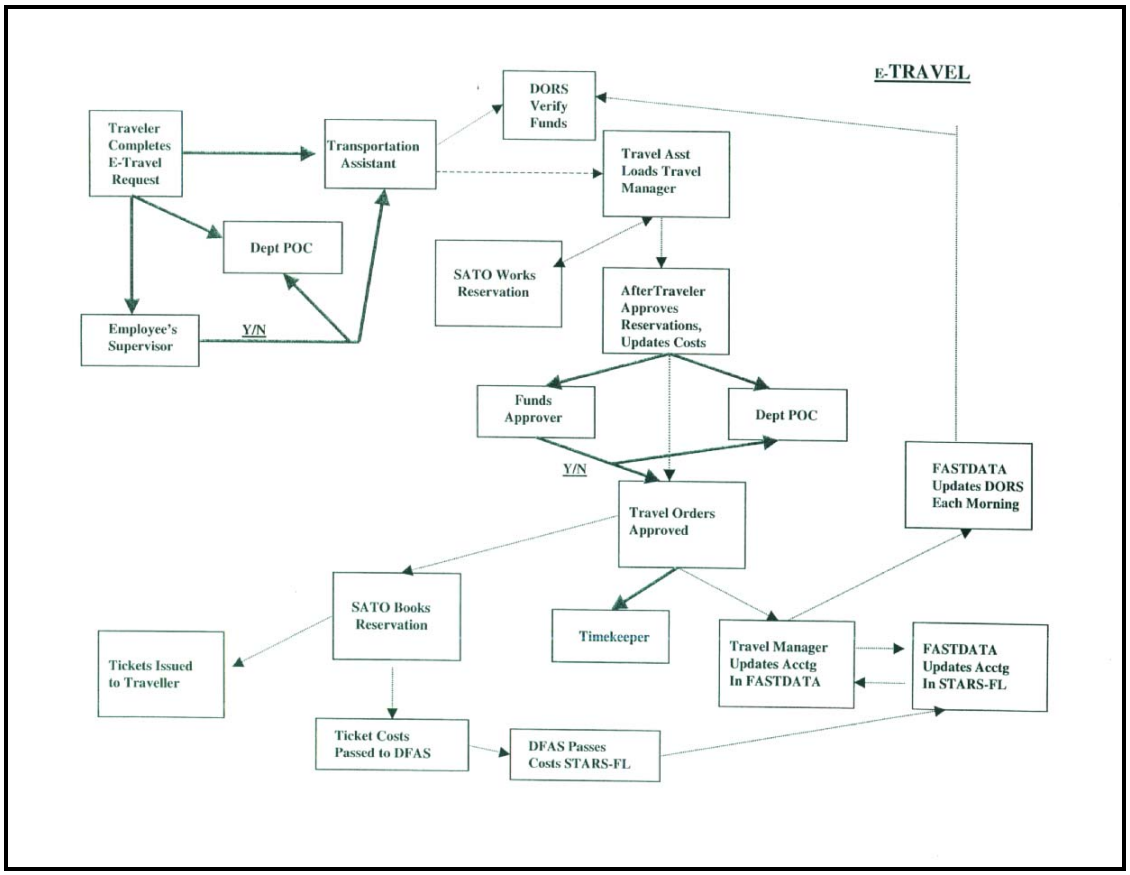

Figure 5. NPS Travel Process. (From Comptroller Division, January 2002)

handwritten requests. This would reduce input errors and processing times. In an automated process, the philosophy is that an e-mail can immediately be responded to and a paper request may sit in an inbox for hours or days before processing. Figure 5 also represents the automated updates of the accounting system that occurs unknowingly to the traveler.

C. DATA FROM TRAVEL MANAGER

Limited data is available from the Travel Manager (TM) software. The traveler manually enters data into the web-based form and never enters data directly on TM. Therefore, the TM time clock does not begin until the

travel assistant completes the manual data entry into TM using the traveler's completed form.

The research data that was requested was processing times from when the traveler enters the request until the voucher is paid, the error rates, and the causes of the errors. However, it is not possible to determine accurate processing times and error rates from historical records.

The research data that was collected was generated by the Travel Manager software and extracted by the contracted technician on staff in the travel office. The data is limited to the number of travel requests and settlements processed.

The travel-related data reported in Table 3 shows that approximately 3,600 travel requests were processed last year at NPS. The "Travel Office" line represents the actual requests and vouchers processed by the consolidated Shared Services Office. The "Non-Travel Office" line represents the requests and vouchers that are still being processed by academic departments. The data shows a disparity between the number of authorizations and the number of vouchers processed. This discrepancy is primarily a result of cancelled trips. Also, if the travel was performed for an outside agency, the voucher is forwarded to that agency for settlement.

Over half of the travel requests and vouchers are being process outside the travel office. Only 1,600 of the requests and 1,300 vouchers were processed through the Shared Services Office. Officially, there are six travel

Created by	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	**Total**
Authorizations													
Travel Office	91	118	142	137	168	110	137	175	74	189	175	84	1600
Non-Travel Office	214	161	163	228	252	224	168	181	114	140	127	72	2044
Total Authorizations	305	279	305	365	420	334	305	356	188	329	302	156	**3644**
Vouchers													
Travel Office	74	78	96	92	108	137	119	111	93	82	201	117	1308
Non-Travel Office	135	167	150	189	219	204	194	214	226	153	156	101	2108
Total Vouchers	209	245	246	281	327	341	313	325	319	235	357	218	**3416**

Table 3. Total Travel Requests and Vouchers Processed at NPS During 2001.

assistants and two supervisors assigned to the Shared Services Office. With this workload, this averages approximately one travel request and one voucher per day per travel assistant.

Tables 4 and 5 illustrate the number of requests/vouchers processed by 13 different persons assigned to the Shared Services Office in 2001. Due to employee turnover and new hires, the data lists thirteen personnel who processed authorizations and vouchers during 2001.

The travel assistants that are numbered five, six, and seven in Tables 4 and 5, handle approximately 60% of all authorizations and vouchers processed by the Shared Services Office. The system is designed so any travel assistant may provide service to any traveler. Still, some travelers utilize the same travel assistant every time they

Travel Assistants	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	**Total By Travel Assistant**
1	0	0	0	0	0	0	0	0	0	30	32	5	**67**
2	0	0	0	0	0	2	0	8	4	16	15	8	**53**
3	1	7	9	13	20	18	13	22	11	5	0	0	**119**
4	0	0	0	0	0	0	0	0	0	13	17	7	**37**
5	29	26	33	43	48	17	43	16	13	26	32	9	**335**
6	17	20	36	24	26	24	17	64	7	0	2	2	**239**
7	29	33	36	11	38	26	30	40	26	39	22	13	**343**
8	4	20	7	25	14	12	21	15	1	14	2	0	**135**
9	0	0	0	1	0	0	1	0	0	1	0	0	**3**
10	0	0	0	0	0	0	0	0	5	39	36	14	**94**
11	3	1	1	2	2	2	11	10	7	5	3	6	**53**
12	7	11	19	16	20	8	0	0	0	0	0	0	**81**
13	1	0	1	2	0	1	1	0	0	1	14	20	**41**
Total By Month	**91**	**118**	**142**	**137**	**168**	**110**	**137**	**175**	**74**	**189**	**175**	**84**	**1600**

Table 4. Travel Requests Processed by Travel Assistants During 2001.

Travel Assistants	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	**Total By Travel Assistant**
1	0	0	0	0	0	0	0	0	0	3	5	23	**31**
2	0	0	0	0	0	0	3	16	17	10	9	14	**69**
3	0	1	3	10	18	35	12	18	17	7	0	0	**121**
4	0	0	0	0	0	0	0	0	0	1	3	21	**25**
5	13	6	13	19	34	24	40	21	21	30	23	6	**250**
6	29	32	39	22	19	30	22	25	7	6	13	16	**260**
7	13	26	25	10	20	17	24	21	23	9	53	16	**257**
8	13	7	4	16	13	17	9	8	2	12	0	0	**101**
9	0	0	0	0	0	1	1	1	0	0	4	1	**8**
10	0	0	0	0	0	0	0	0	1	1	20	20	**42**
11	0	0	0	0	0	0	0	1	5	3	1	0	**10**
12	5	6	12	15	4	12	0	0	0	0	0	0	**54**
13	1	0	0	0	0	1	8	0	0	0	70	0	**80**
Total By Month	**74**	**78**	**96**	**92**	**108**	**137**	**119**	**111**	**93**	**82**	**201**	**117**	**1308**

Table 5. Travel Vouchers Processed by Travel Assistants During 2001.

travel. This may be because of a relationship formed before the consolidation of travel assistants or the level of service that they provide.

D. FACULTY SURVEY

To gather information from the primary user of the travel system, during February 2002, a questionnaire was sent to 80 faculty at NPS requesting information on their travel experiences. The faculty members were randomly selected from the professor listing from Winter Quarter 2002. The sample represents 37% of the total 216 faculty. I received 35 responses. Two responded that they did not travel. Four responded that they traveled for other units and did not utilize the NPS travel system. Thus, only 29 (a 36% response rate) individuals completed the questionnaire and some did not respond to all questions. Below are the questions:

1. How many times do you travel per year?

2. Do you fill out your own travel request using the web page?

3. Do you find the travel system easy - difficult (1-5) to use?

4. How many times have you had problems setting up your travel request?

5. In what areas did you have problems?

6. How many times have you had problems settling your travel claim?

7. In what areas did you have problems?

8. Do you usually work with one of the travel assistants in the Shared Services Office?

9. What one change would you implement today?

Table 6 displays the data for all who responded to the survey. The individual number of trips ranged from 1 to 14 trips per year, the average of responses being 5.83

Question #	1	2	3	4	6	8
	14	No	3	66%	10%	No
	13	Yes	4	100%	50%	Yes
	12	Yes	2	85%	50%	Yes
	10	Yes	5	100%	60%	No
	10	No	4	66%	10%	Yes
	9	Yes	4	66%	33%	
	8	Yes	3	100%	20%	Yes
	7	Yes	2	100%	10%	No
	7	Yes	4	66%	0%	Sometimes
	7	No			0%	No
	7	No	5	100%	10%	Yes
	6	Yes	3	40%	25%	Yes
	6	Yes	2	50%	20%	No
	5	Yes	3	20%	20%	Sometimes
	5	No		100%	100%	Yes
	5	No	5	100%	33%	No
	4	No	3	66%	0%	Yes
	4	Yes	5	100%	0%	Yes
	4	Sometimes	2	0%	0%	Yes
	4	Yes	4	33%	0%	Yes
	4	Yes	4	100%	100%	No
	3	Yes	3	0%	0%	Yes
	3	No	5			
	3	Yes	4	100%	0%	Yes
	2	No				
	2	Yes	3	33%	33%	Sometimes
	2	Yes	3	100%	100%	Yes
	2	Yes	3	25%	0%	Yes
	1	Yes	1	0%	0%	No
Totals	169	Y=19 N=9 S=1	89			Y=15 N=8 S=3
Averages	5.83		3.42	66%	25%	

Table 6. Survey Data from Faculty Survey.

Question #	1	2	3	4	6	8
	14	No	3	66%	10%	No
	13	Yes	4	100%	50%	Yes
	12	Yes	2	85%	50%	Yes
	10	Yes	5	100%	60%	No
	10	No	4	66%	10%	Yes
	9	Yes	4	66%	33%	
	8	Yes	3	100%	20%	Yes
	7	Yes	2	100%	10%	No
	7	Yes	4	66%	0%	Sometimes
	7	No			0%	No
	7	No	5	100%	10%	Yes
	6	Yes	3	40%	25%	Yes
	6	Yes	2	50%	20%	No
	5	Yes	3	20%	20%	Sometimes
	5	No		100%	100%	Yes
	5	No	5	100%	33%	No
Averages	8.19	Y=10 N=6	3.5	77%	28%	Y=7 N=6 S=2

Table 7. Survey Data for Faculty Reporting More Than Four Trips.

Question #	1	2	3	4	6	8
	4	No	3	66%	0%	Yes
	4	Yes	5	100%	0%	Yes
	4	Sometimes	2	0%	0%	Yes
	4	Yes	4	33%	0%	Yes
	4	Yes	4	100%	100%	No
	3	Yes	3	0%	0%	Yes
	3	No	5			
	3	Yes	4	100%	0%	Yes
	2	No				
	2	Yes	3	33%	33%	Sometimes
	2	Yes	3	100%	100%	Yes
	2	Yes	3	25%	0%	Yes
	1	Yes	1	0%	0%	No
Averages	2.92	Y=9 N=3 S=1	3.33	51%	21%	Y=8 N=2 S=1

Table 8. Survey Data for Faculty Reporting Four or Less Trips.

trips. Tables 7 and 8 split the data for those who travel 5 times (high volume) or more annually and those who travel 1 to 4 times (low volume).

In question 2, 68% of the time travelers are entering the data into the web form, others have administrative personnel enter the data for them. The percentage changes when the data is split. For the high volume traveler the percentage drops to 63% and the low volume traveler completes the form 76% of the time.

It was interesting to discover with a system designed for each traveler to enter his/her own data into the web form that 10 of the 29 responded that someone else entered that data for them. The travelers that had others enter the data elaborated that the process was too difficult and too time consuming to use. Yet, all these travel requests were initially prepared by the traveler in writing.

In question 3, on a scale of 1 to 5 with 1 being the easiest to use and 5 the most difficult to use, the average response was 3.42. This number did not vary as the number of trips was increased. Even though the responses leaned slightly to the difficult side, no one responded that the system was impossible.

In the area of travel requests, the average showed problems occurred an average of 66% on trips taken. As the number of trips per year increased, so did the percentage of problems. The high volume travelers in Table 7 had problems with their travel requests almost 77% of the time. Almost every response reported scheduling problems. There were 8 responses that they experienced problems with flight scheduling/reservations, hotel and rental car reservations. Flight scheduling/reservations were listed on 4 responses and hotel reservations were listed on 3. Late travel

arrangements and travel requests not being incorporated into the itinerary were problems for 4 travelers.

There were fewer complaints on the topic of travel settlements. The average for settlement processing problems was 25%. There were 5 responses that voiced concerns with procedures, i.e. routing, forms, or a change in travel orders. Settlement time as greater than 5 days was listed on 5 responses.

Seventy percent of the travelers responded that after they entered the required data into the web form they still had to work one on one with a travel assistant in order to complete the travel request or voucher. Often, the traveler is required to explain his/her trip 2-3 times before the process is complete. This is also time consuming for the travel assistant in the Shared Services Office who acts as the liaison between the traveler and SATO.

The final question asked for the travelers input was if the traveler could have one thing changed, what would it be? There were 10 responses that the traveler make their own travel arrangements or work directly with SATO. Other concerns included forms that were not user friendly and a process that was too time intensive.

E. NPS SYSTEM VERSUS PROPOSED MODEL

In comparing the model that was presented in Chapter III to the NPS system, I find that that the NPS system did not go far enough in their reengineering effort. Actually, the NPS efforts should be categorized as an attempt at process improvement. Table 1 showed that process improvement is a continuous process building on existing

systems and this is what we find displayed in this chapter. Had the teams been able to throw out existing systems and focus on the user needs of quality service and speed, the system would look much like the model.

Factors	NPS Reengineering Effort	Model
Senior Leadership Support	Little if any identified	Requirement for success
Selection of Reengineering Team	Highly tied to current system	Cross section; users of the system
Head of the Team	Comptroller	Leader with power, influence change
Plan	No timeline; inappropriate measures	Comprehensive plan goals/milestones
Report Status to Senior Leadership	Little if any identified	Frequent meeting to update; receive guidance
Education and Training	No wide spread effective training	Educate for cultural acceptance
Costs and Benefits	Ineffective; time consuming	Efficient system; user satisfaction

Table 9. NPS versus The Proposed Model

Table 9 displays the 8 steps that were listed in Chapter 3 for a successful reengineering effort with a comparison of the NPS efforts and the model. NPS showed little or no involvement by senior leadership. After the project began there was no evidence of guidance. Personnel from the Comptroller Division primarily staffed the reengineering teams. The others that were involve were part of the existing process. There was no user involvement. The head of the teams was from within the current process and had little influence for process

change. The plan gave no timeline. The goals that were established were unable to be accurately measured. The users were not incorporated into the training environment. Their education and training early would have helped in the system buy-in. The costs are that we still have a system that travelers do not want to use. Due to limitations in data availability, it was not possible to compare costs of the old and new NPS travel systems.

F. SUMMARY

The reengineering of the NPS travel process has been an ongoing project for over six years. Many people have worked hard to develop an improved system. However, based on the comparisons of travel systems and the feelings of travelers, it is apparent that the process has not drastically changed for the better. Recall the comparison of process improvement versus process innovation in Chapter II. One might say that the NPS reengineering efforts were improvement oriented rather than "innovative" or "radical" or "dramatic."

If the focus of a reengineering effort is to be on the customer and the service that is provided, the new travel system has failed. One metric was set for the system to have 95% of the travel requests completed correctly the first time. The survey has shown that 75% of the time they have problems with scheduling and are required to work one on one with a travel assistant.

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V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

A. SUMMARY OF THESIS

This thesis started with an overview of the reengineering process and its goals and objectives. A number of successful private-sector reengineering efforts were discussed. Next, the reengineering of the travel systems in DoD and companies were reviewed, culminating in the presentation of a proposed model for travel systems. Finally, the NPS travel reengineering efforts over several years were presented with resulting views from faculty travelers as reported in a survey.

Many reengineering tools for the NPS travel system were utilized during the past six years. Yet, the new travel system is not very different from the system that existed at the outset of the reengineering efforts. When compared to the proposed travel model in Chapter III, the new travel system is more complex with non-value added steps and processing times.

From the traveler's perspective—the customer served by the new travel system, it remains much the same in terms of services rendered. Over 30% of the travelers hand their travel request to someone for data entry into the system. As the proposed model showed, there must be a complete plan and support for change from all involved.

The reengineering process is often met with challenges. It is the leadership's responsibility to provide those assigned all the tools required for success. The scope cannot be limited by a philosophy of "cuts must be made". All stakeholders in the system need to have a

voice in the process. Limiting the traveler's input to the reengineering process resulted in a system that few travelers e want to use.

Future reengineering efforts will always be compared to this one. When a reengineering effort is started, there cannot be fear of changing the status quo. With proper senior management involvement, the current process can still be drastically improved. The development of measurable controls and support from all stakeholders is needed if the travel system is to succeed.

B. CONCLUSIONS

1. Management of the reengineering project. The comptroller was clearly directing the travel reengineering effort. In this situation, he was assigned as the process owner. Unfortunately, the comptroller only has the power to direct change under his division. The majority of the system did not fall within the comptroller's control. He did have liaison with the other divisions, administration and SATO, and it showed that he had their support.

The two teams that were developed to work on the problem were primarily from the comptroller division. Familiarity with a system often limits the innovative and creative processes. Many members worked with the process on a daily basis. When trying to develop a new way of doing business it helps to bring in outsiders who can provide a fresh view of the problem. Support of the faculty travelers could have been gained through their involvement with system development. This is extremely important, because the faculty is the primary user of the system.

Team members should also be allowed to dedicate a majority of their time to the reengineering effort. From the correspondence during the reengineering effort, team members were working their normal work schedules and fitting travel reengineering in when they were able. Meetings were usually scheduled for Friday afternoons and were occasionally missed by members because of scheduling conflicts.

2. Comprehensive project plan. In order for the teams to be successful, they must be a common plan. The project plan lays out the activities, deliverables, and deadlines for the effort and serves as the baseline for managing and measuring progress. Goals and objectives must be developed with the support of senior leadership so all levels are working together. The teams were working on tasks that were developed or assigned from week to week.

They completed one of the primary tasks, which was to analyze the existing travel process. The teams provided flowcharts with activity levels of the process. Problem areas were identified that slowed the travel process. It was from this analysis the decision was made to consolidate travel assistants. Table 2 showed that resistance was expected from the travelers against the consolidation, but nothing was done to solve these problems. The alternatives that were contemplated surrounded the level of consolidation, building, department, or NPS.

3. Achieving the desired results. The teams developed expectations and standards for the new system to follow, but they were hard to measure. The standards were developed around processing times at each stage of the

process and accuracy rates. After the implementation, there was not one system able to measure times and rates throughout the entire process. The web form on which travelers manually entered their data was manually reentered into Travel Manager.

The faculty survey showed that travelers find the travel system difficult to use. Travelers felt they had a loss of service. Instead of walking down the hall to see their travel assistant, they were communicating via email. The travelers' needs were vastly ignored in an attempt to streamline the system.

C. RECOMMENDATIONS

The NPS has felt that they were catering to the traveler in the development of the tools currently in place. A few faculty members were asked for their input on the system and the Travel Manager software was termed "difficult to use". At this point, an intensive training program should have been initialized.

The user was able to refuse to give in to the reengineering changes. In addition, the implementers allowed travel assistants to input data. A travel assistant in each division was thought to be redundant, so they were consolidated, but a medium had to be developed to forward requests. A web form was developed requiring travelers to enter all the data required for travel. The travelers are still very unhappy with the system and the current process is not achieving its performance goals.

I recommend that a team comprised of travelers and Deputy Superintendent take another look at this process, primarily from the user's perspective. A new process that

is developed around the travelers' needs must be established. I recommend that the following steps be initiated:

- Reengineer the process following the guidelines and model presented in Chapter III.
- Eliminate the web-based form.
- Upgrade the Travel Manager software to the latest revision.
- Provide training, beginning with those who travel most often.

Reengineering in response to meeting customer expectations can be far more effective than reengineering based on internal factors.

D. DIRECTIONS FOR FUTURE RESEARCH

When analyzing a system for change, the existing system is often compared to other existing systems. Comparison with civilian corporations is difficult to do, because government entities have regulations that cannot easily be changed.

I have found that civilian corporations are more concerned with providing a fair and fast reimbursement of travel expenses. A corporation perceives a traveler two ways. One, the traveler is "honest". The DoD has tried to accept this philosophy, but our culture is slow to accept it. Two, the cheating traveler will be caught, but it is not cost efficient to set up a system to weed out the cheaters. This corporate philosophy results in regulations averaging 5-10 pages. Travelers are required to verify and submit the justification of their own expenses via a web-

based system and the corporate credit card is managed and paid in full monthly by the corporation's accounting office.

The Space and Naval Warfare Systems Command (SPAWAR) currently uses Travel Manager as their travel system. SPAWAR processes approximately five times the travel requests as NPS with less travel assistants. The most significant difference is the travelers enter data directly into Travel Manager. This eliminates the data entry redundancy. The traveler also works directly with the CTO (SATO). The travelers can receive an itinerary that they are happy with the first time. The travel assistants are able to assist travelers with specific problems and provide overall system management. Future research is needed to compare the SPAWAR travel system to the NPS travel system.

With the availability of the World Wide Web traveler should be able to make all reservations online from his computer. The need for a Commercial Travel Office (SATO) no longer exists. The travelers can receive an itinerary that they are happy with the first time.

A fresh approach to the travel system at NPS and other DoD sites is to take a blank sheet of paper and use the best information technology and best practices available to design a new system. For example, as some faculty commented, eliminating all the middlemen by permitting direct faculty to airline transactions saves valuable faculty time and secures best service. This was one of the reasons for justifying the government travel card. SATO and other processes do not add value to the traveler.

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